

Amendments to the Claims

1-3. (canceled)

3. (currently amended) ~~The method of claim 2 and further comprising:~~ A method of providing minimal power consuming redundant computing elements for a distributed application comprised of a plurality of components, wherein the plurality of components are hosted by a plurality of computing elements that can each enter a power saving mode, the method comprising:

- detecting an impending or actual failure of an affected computing element;
- identifying instances of components executing on the affected computing element;
- signaling a cold spare computing element to enter a normal operation mode from the power saving mode;
- initializing instances of identified components on the cold spare computing element now operating in normal operation mode;
- gracefully suspending all instances of identified components executing on the affected computing element;
- signaling the affected computing element to enter a hot swap mode from the normal operation mode;
- replacing the affected computing element with a replacement computing element;
- signaling the replacement computing element to enter the normal operation mode from the hot swap mode;
- initializing instances of identified components on the replacement computing element now operating in the normal operation mode;
- gracefully suspending all instances of identified components on the cold spare computing element; and
- signaling the cold spare computing element to enter the power saving mode from the normal operation mode.

4-5. (canceled)

6. (currently amended) ~~The computer program product of claim 5 further including:~~ A computer program product comprising:

at least one computer usable medium having computer readable code embodied therein for providing availability of minimal power consuming redundant computing elements for a distributed application comprised of a plurality of components, wherein the plurality of components are hosted by a plurality of computing elements that can each enter a power saving mode, the computer program product including:

first computer readable program code devices configured to detect an impending or actual failure of an affected computing element;

second computer readable program code devices configured to identify instances of components executing on the affected computing element;

third computer readable program code devices configured to signal a cold spare computing element to enter a normal operation mode from the power saving mode;

fourth computer readable program code devices configured to initialize instances of identified components on the cold spare computing element now operating in the normal operation mode;

fifth computer readable program code devices configured to gracefully suspend all instances of identified components executing on the affected computing element;

sixth computer readable program code devices configured to signal the affected computing element to enter a hot swap mode from the normal operation mode;

seventh computer readable program code devices configured to detect a replacement of the affected computing element with a replacement computing element;

eighth computer readable program code devices configured to signal the replacement computing element to enter the normal operation mode from the hot swap mode;

ninth computer readable program code devices configured to initialize instances of identified components on the replacement computing element now operating in the normal operation mode;

tenth computer readable program code devices configured to gracefully suspend all instances of identified components on the cold spare computing element; and

eleventh computer readable program code devices configured to signal the cold spare computing element to enter the power saving mode from the normal operation mode.

7-8. (canceled)

9. (currently amended) ~~The computer system of claim 8 wherein the program executing on the management unit also:~~ A computer system comprising:

a backplane;

a plurality of host processor cards coupled to the backplane, with the plurality of host processor cards hosting a distributed application comprised of a plurality of components, and at least one of the plurality of cards designated as a cold spare host processor card that is normally kept in a power saving mode; and

a management unit coupled to the back plane, the management unit operable to signal each of the plurality of host processor cards to enter the power saving mode and a normal operation mode, and executing a program that:

detects an impending or actual failure of an affected host processor card of the plurality of host processor cards;

identifies instances of components executing on the affected host processor card; signals the cold spare host processor card to enter the normal operation mode from the power saving mode;

initializes instances of identified components on the cold spare host processor card now operating in normal operation mode;

gracefully suspends all instances of identified components executing on the affected host processor card;

signals the affected host processor card to enter a hot swap mode from the normal operation mode;

detects replacement of the affected host processor card with a replacement host processor card;

signals the replacement host processor card to enter the normal operation mode from the hot swap mode;

initializes instances of identified components on the replacement host processor card now operating in the normal operation mode;

gracefully suspending all instances of identified components on the cold spare computing element; and

signaling the cold spare computing element to enter the power saving mode from the normal operation mode.